

Application No. 09/932,520
Docket No. 1999U021D1:US
Reply to Office Action Dated August 14, 2003

Remarks

Claims

Claims 1, 4-14, and 35-39 remain in this application. Claims 1, 5, 8, 35 and 37 have been amended. Claims 2, 3 and 38 have been cancelled.

Section 112 Rejections

Claims 1-14 and 35-39 have been rejected under 35 U.S.C. 112, first paragraph. It is suggested by the Examiner that the application is enabling only for a method of making a catalyst comprising a metallocene dichloride with an alumoxane cocatalyst having a mixture of L-malic acid and potassium or calcium carbonate as the inhibitor mixture. It is the Examiner's position that the application does not reasonably provide enablement for other inhibitor mixtures or any other catalyst. The Examiner states that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

This rejection is respectfully traversed. It is respectfully submitted that as the Examiner well knows, the specification is directed toward one of ordinary skill in the art. An ordinary practitioner in the art is well familiar with the compounds that cause a catalytic polymerization process to become deactivated. The art has a long history wherein deactivators are disclosed and taught. Given the teachings of this application any ordinary practitioner in the art would know and understand which two compounds to select so as to provide the deactivator. The ordinary practitioner would be well familiar with the deactivators as taught in the history of this art and hence would not require to perform any experimentation in order to arrive at and select two solid compounds that would react above the polymerization operating temperature. The melting points of compounds are well familiar to the ordinary practitioner in the art and hence would be a simple matter, given the teachings of this application, to select the proper combination of compounds in order to accomplish the purpose of the invention. Basically any polar compound as defined in the specification can react with another polar compound as defined in the specification to form the species to deactivate the catalyst. In accordance with the invention, the deactivating polar compound does not appear during the normal polymerization operating temperature. In accordance with the teachings of this invention the two solids that do not react

Application No. 09/932,520
Docket No. 1999U021D1.US
Reply to Office Action Dated August 14, 2003

during the polymerization operating temperature do react above the operating temperature when at least one of the compounds becomes a liquid. Any ordinary practitioner given the teaching of this specification would readily know the melting points of compounds and hence selection of the compounds would be a simple matter not requiring any experimentation by the ordinary practitioner in the art. Here, for example, is a list of compounds that anyone of ordinary skill in the art would say would deactivate for example a Z/N or metallocene catalyst in the necessary concentrations: water, carbon dioxide, carbon monoxide, sulfur dioxide, oxygen, methanol, acetic acid, methyl acetate, tetrahydrofuran, acetaldehyde and acetone.

The claims now have been amended to read on solid compounds hence the Examiner's argument regarding solvents is now irrelevant.

Additional evidence that the ordinary practitioner in the art would be enabled by the specification is parent application USSN 09/392,421 now US 6,346,584. It is clear from the record of the file history in that application that the Examiner found the application to be enabled.

Claim 1-14 and 35-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The claims have been substantially amended so as to satisfy the Examiner's objections. The Examiner states that in claim 1, 1. 3 it is not clear toward what the catalyst composition is deactivated. It is respectfully submitted that deactivation is such a well-established process in the art and so well understood that the ordinary practitioner would not find the term indefinite but realize that the polymerization process is that which is being deactivated. If the Examiner still finds the matter troubling the undersigned would readily amend the claim in accordance with a reasonable suggestion by the Examiner.

Section 103 Rejections

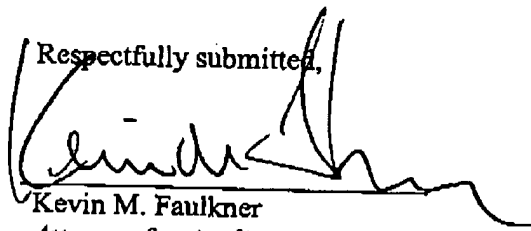
Claims 1-14 and 35-39 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Klein et al.* (herein after referred to as *Klein*). The Examiner states that *Klein* discloses a catalyst having in its composition a mixture of a carboxylic acid and water. The Examiner states

Application No. 09/932,520
Docket No. 1999U021D1.US
Reply to Office Action Dated August 14, 2003

that the carboxylic acid acts to prevent polymer build-up caused by the presence of water in the olefin feed. The Examiner states that "it would have been obvious to one of ordinary skill in the art that the acid and the water would have reacted with each other to some degree at any temperature, and that this reaction would have become significant enough to impede the polymerization process above some discoverable temperature." The undersigned must respectfully disagree with this quote. It is evident that the purpose of the *Klein* invention is to provide, inter alia, an accelerating action and to improve catalytic activity (Col. 1, line 67, Col. 2, line 20, line 35 and 36). Nowhere is there any teaching by *Klein* of employing two solid compounds that will deactivate the catalyst when the polymerization temperature rises above the polymerization operating temperature. Although *Klein* is able to "modulate" the activity of the catalyst, his modulation relates to improving catalytic activity, not deactivation. It is therefore respectfully submitted that it would not be obvious from a reading of *Klein* to select two solid compounds that would react above an operating temperature to deactivate the catalyst toward olefin polymerization.

In view of the above it is now respectfully submitted that the claims in this application are in condition for allowance. Prompt notice of allowance is respectfully solicited. The Applicant invites the Examiner to telephone the undersigned attorney if there are any other issues outstanding which have not been presented to the Examiner's satisfaction.

November 6, 2003
Date

Respectfully submitted,

Kevin M. Faulkner
Attorney for Applicants
Registration No. 45,427

Univation Technologies, LLC
5555 San Felipe, Suite 1950
Houston, Texas 77056-2723
Phone: 713-892-3729
Fax: 713-892-3687